

*MC 1150E CRAWLER TRACTOR*

# OVERVIEW

- Safety and operator responsibilities
- General characteristics
- Major components
- Instruments and controls
- Basic operations
- Operating techniques
- Preventative maintenance checks and services

## ***TERMINAL LEARNING OBJECTIVE***

Provided engineer equipment, tools, equipment records and references, conduct engineer equipment preventive maintenance so that equipment is checked and serviced per the appropriate technical manual and actions/deficiencies/discrepancies are recorded per TM 4700-15/1H (1345-MANT-1001)

## **TERMINAL LEARNING OBJECTIVE**

Provided an MC 1150E tractor, an engineer equipment requirement and engineer equipment records and forms, operate the MC 1150E tractor to safely meet the operational requirement with no injury to personal or damage to equipment.  
(1345-XENG-1005)

# **ENABLING LEARNING OBJECTIVES**

Given the description and characteristics of the MC1150 tractor, and without the aid of references, identify the characteristics per the TM 09062A-OR. (1345-XENG-1005a)

Provided a MC 1150E, engineer equipment records and forms, and with the aid of references, initiate operator forms and records per the TM 4700-15H1 (1345-XENG-1005b)

# **ENABLING LEARNING OBJECTIVES**

Provided a MC 1150E, engineer equipment records and forms, technical manuals and lubrication orders, perform technical manual research per the TM-09062A-OR. (1345-XENG-1005c)

Provided a MC 1150E, engineer equipment records and forms, tools, and with the aid of references, demonstrate correct use of tools per the TM 10209-10/1. (1345-XENG-1005d)

**NABLING** a **LEARNING OBJECTIVE**  
provided a MC 1150E, engineer equipment records and forms, tools, petroleum, oils, and lubricants and with the aid of reference, demonstrate the correct use of POL per the TM-09062A-OR(1345-XENG-1005e)

Provided with a MC 1150E tractor, engineer equipment records and forms, tools, petroleum, oils, and lubricants, and with the aid of references, perform operation checks (before, during, and after) per the TM-

## **ENABLING LEARNING OBJECTIVES**

Provided with a MC1150E tractor, an operator, and without the aid of reference, perform hand and arm signals per the FM 21-60. (1345-XENG-1005g)

Provided with a MC1150E, an operator, and without the aid of references, perform stockpiling operations per the TM-09062A-OR. (1345-XENG-1005h)

# **NABLING LEARNING OBJECTIV**

Provided an MC1150E, engineer equipment records and forms, and references, perform leveling operations utilizing six way blade per the TM-09062A-OR(1345-XENG-1005i)

Provided with a MC1150E, engineer equipment records and forms, and references, perform ditching operations per the TM-09062A-OR(1345-XENG-1005j)

**NABLING LEARNING OBJECTIVE**  
Provided an MC1150E, engineer  
equipment records and forms, and  
with the aid references, complete  
operator forms and records per the  
TM-4700-15/1 (1345-XENG-1005k)

Provided with a MC1150E, tools,  
petroleum, oils, and lubricants,  
equipment records, and references,  
conduct preventive maintenance per  
the TM-09062A-OR.(1345-XENG-  
1005I)

# **METHOD/ MEDIA**

This lesson will be taught using the informal lecture, demonstration, and practical application method. I will be aided with the ~~VALUATION~~ computer video graphic material and the instruction on the fifth training day. There will be a 25 question test followed by the practical application exam.

## **SAFETY/CEASE TRAINING**

Safety will be briefed everyday before and after chow.

# MISSION, FUNCTIONS, CHARACTERISTICS

- The mission of the MC1150E is to support infantry, artillery, communication and engineer units.
- Primary function is leveling, stockpiling, and quick dozing.
- Secondary functions include winching loads and vehicle recovery.

## *Continued....*

- Diesel engine powered, full-tracked, light-weight dozer manufactured by J.I.Case.
- Able to perform fording operations up to 60”.
- Weight - 25,050lbs.
- Capable of being transported both internally and externally by aircraft.



# *QUESTIONS ??*

*How can the MC1150E be transported by aircraft?*

*Internally or Externally.*

*What is the mission of MC1150E?*

*To support infantry, artillery, communication and engineer units.*

# MAJOR COMPONENTS

# ***ENGINE***

- J.I. Case 6T-590, six cylinder, in-line, fuel injected, turbocharged, water cooled diesel engine.
- Lubricated by 15/40w
- Air compressor
- Left Side
- Drained Daily



## *ENGINE Cont...*

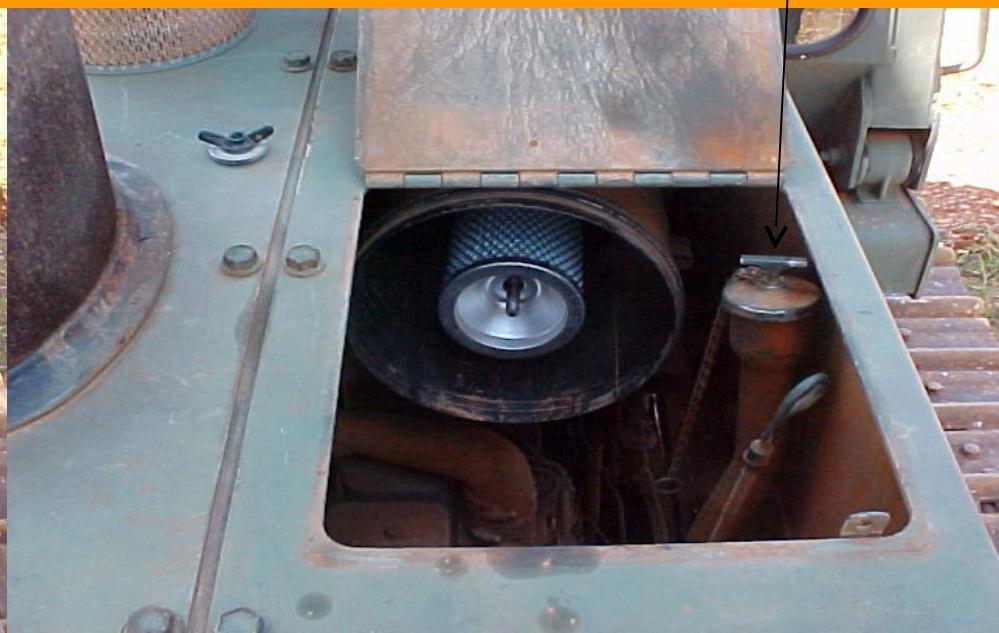
- Maximum horsepower is 118 @ 2100 RPM's.



# *ENGINE Cont...*

- The Engine air intake system consists of a primary and secondary filter.

*Engine Oil Check/ F*



# *ENGINE Cont...*

- It has a 24 volt, negative ground electrical system.



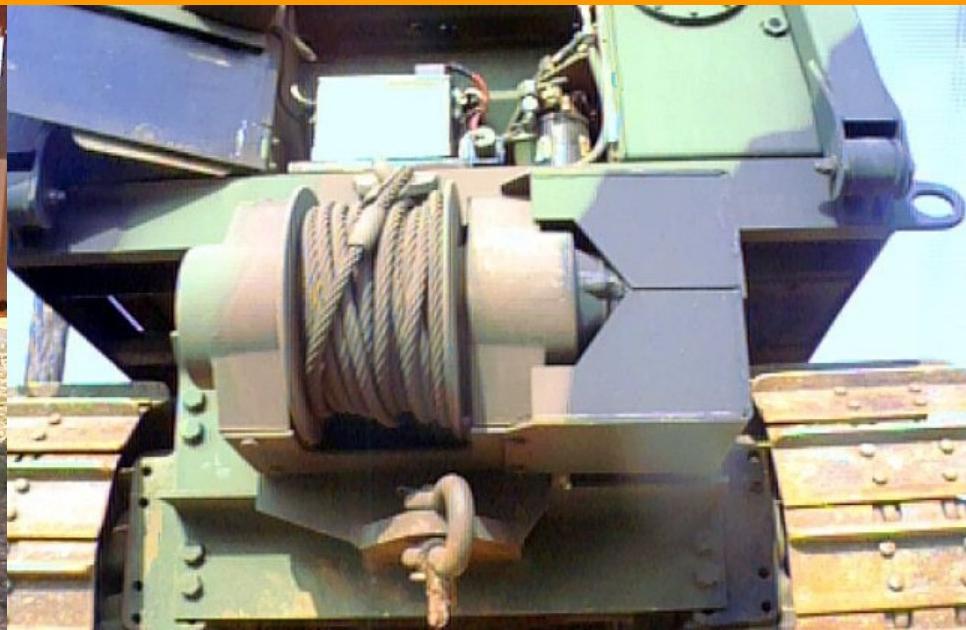
*Transmission Oil  
Check/ Fill*

# ***TRANSMISSION***

- Power shift, each track is driven independently through a separate set of clutches and gears.
- Lubricated by 10w
- The MC1150E is capable of four gears forward and four gears reverse.
- Max Forward 6.3 mph
- Max Reverse 7.6
- Fill and check located next to the left side of the transmission.

# *Components*

- The MC1150E comes with a dozing blade and winch that are hydraulically operated.



# *Blade*

- Length of the blade is 9 feet 2 inches wide.
- Consists of 2 cutting edges and 2 end bits, which are flipped when worn  $3/4$ " from the cutting edge.
- $1/8$  inch steel blade



## *Blade cont...*

- Tilt 13.6 inches left or right of center.



## *Blade cont...*

- Blade angles 0-25 degrees left to right.



# *Winch*

- (Model GH-15 ) is used for vehicle recovery operations.
- Single speed, hydraulically operated.
- Holds 164 ft. of 3/4” wire rope.
- Max pulling capacity is 30,000 lbs.
- Minimum 3-4 wraps



# ***ROPS***

- It also has a roll over protective structure. (ROPS)



# **QUESTIONS ??**

***What is the max horsepower of the 1150E?***

**118hp at 2100 rpm**

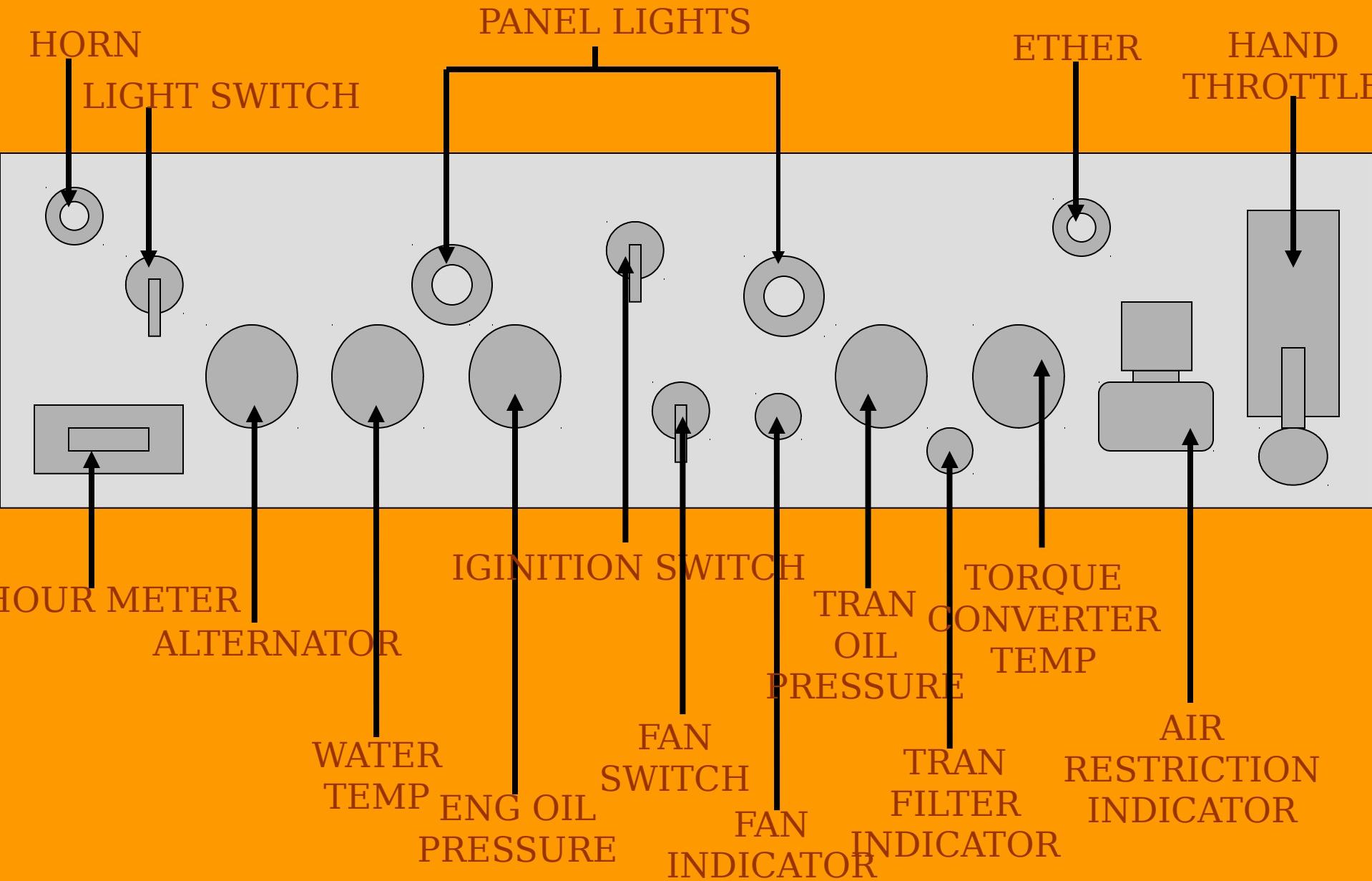
***What type of transmission does the 1150E have?***

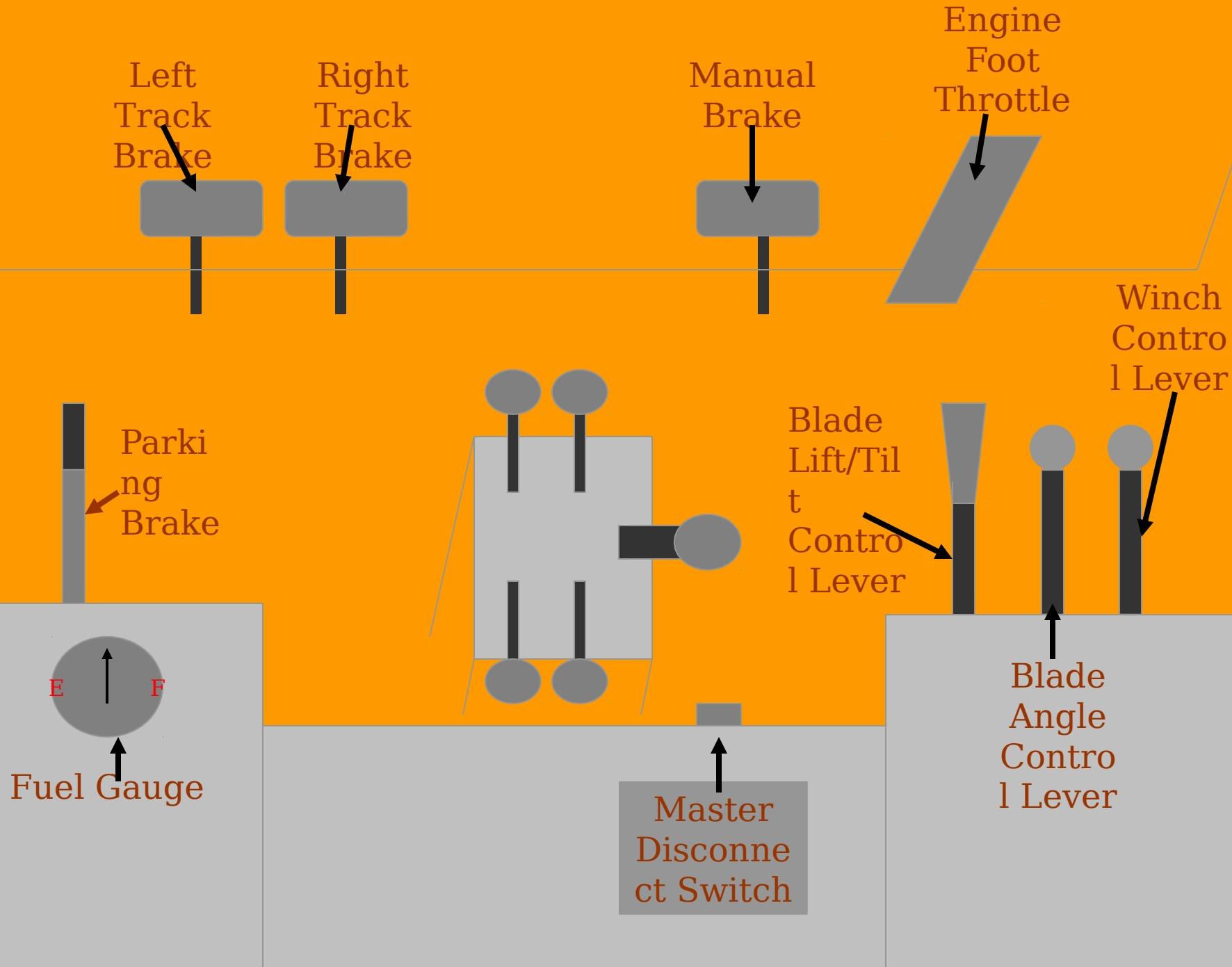
**Powershift**

***How many speeds does the winch have?***

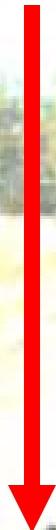
***One (single speed)***

*INSTRUMENTS  
AND  
CONTROLS*





**Neutral Lock**



**Starter Button**

# ***QUESTIONS ??***

**When do you apply the ether start?**

**At 32 degrees or below(freezing)**

**The hand throttle is only used when?**

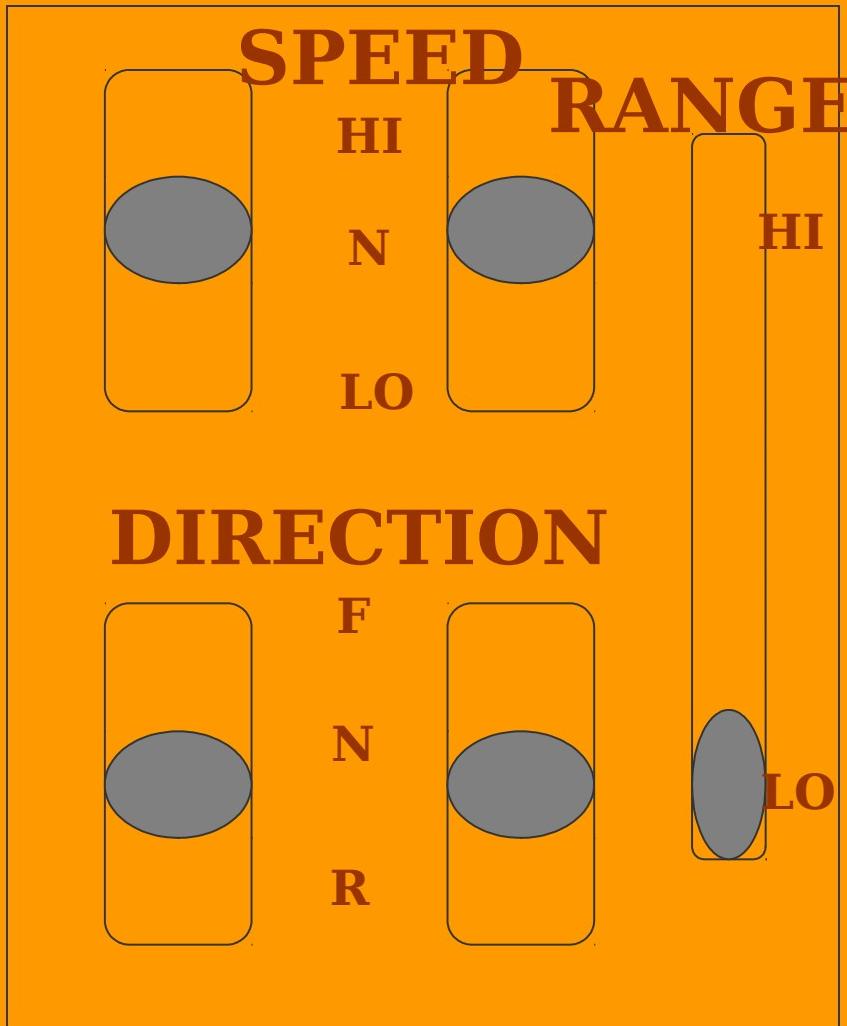
**During winching operations**

**Where is the starter button located?**

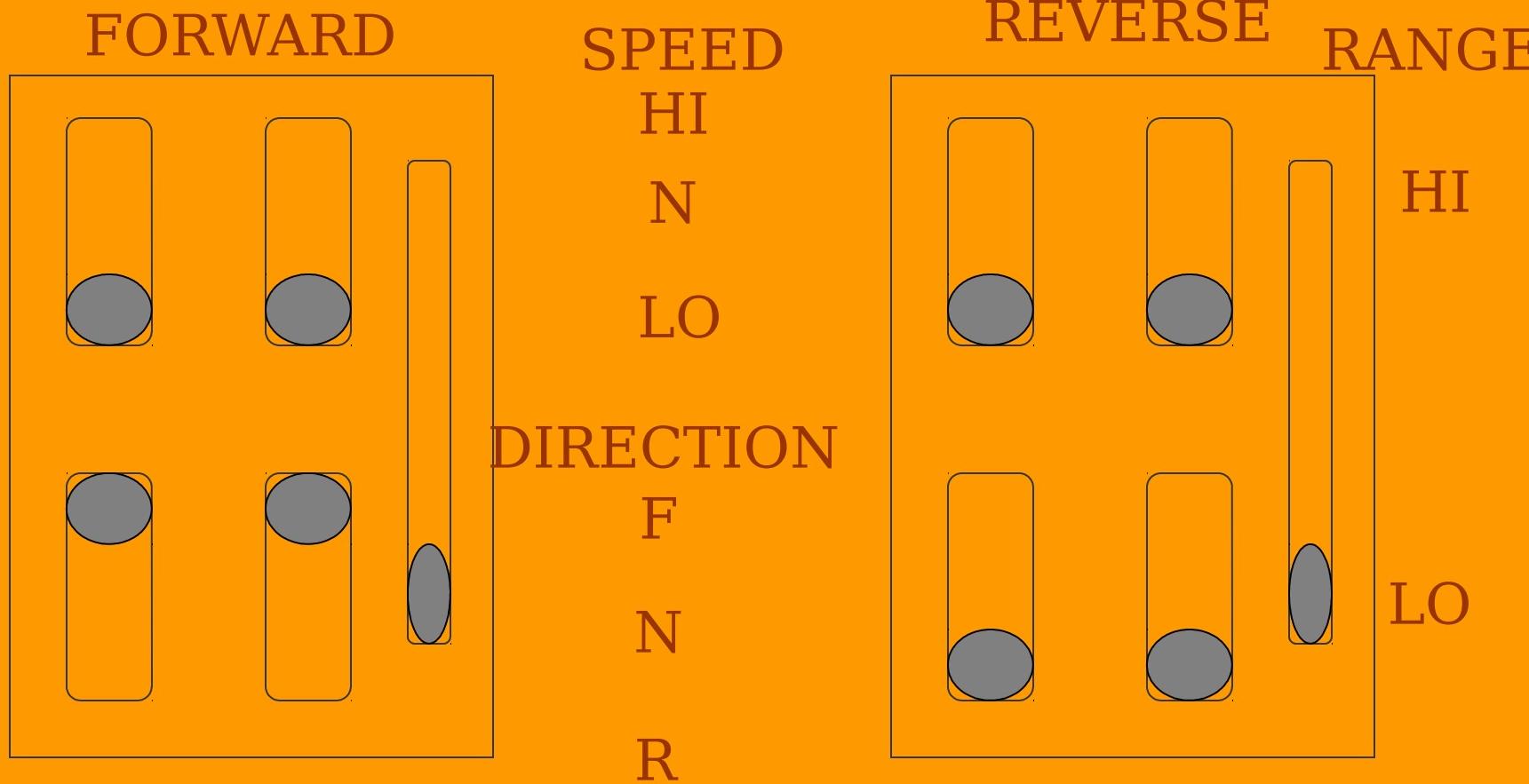
**On the front of the transmission control tower**

**What does the neutral lock do?**

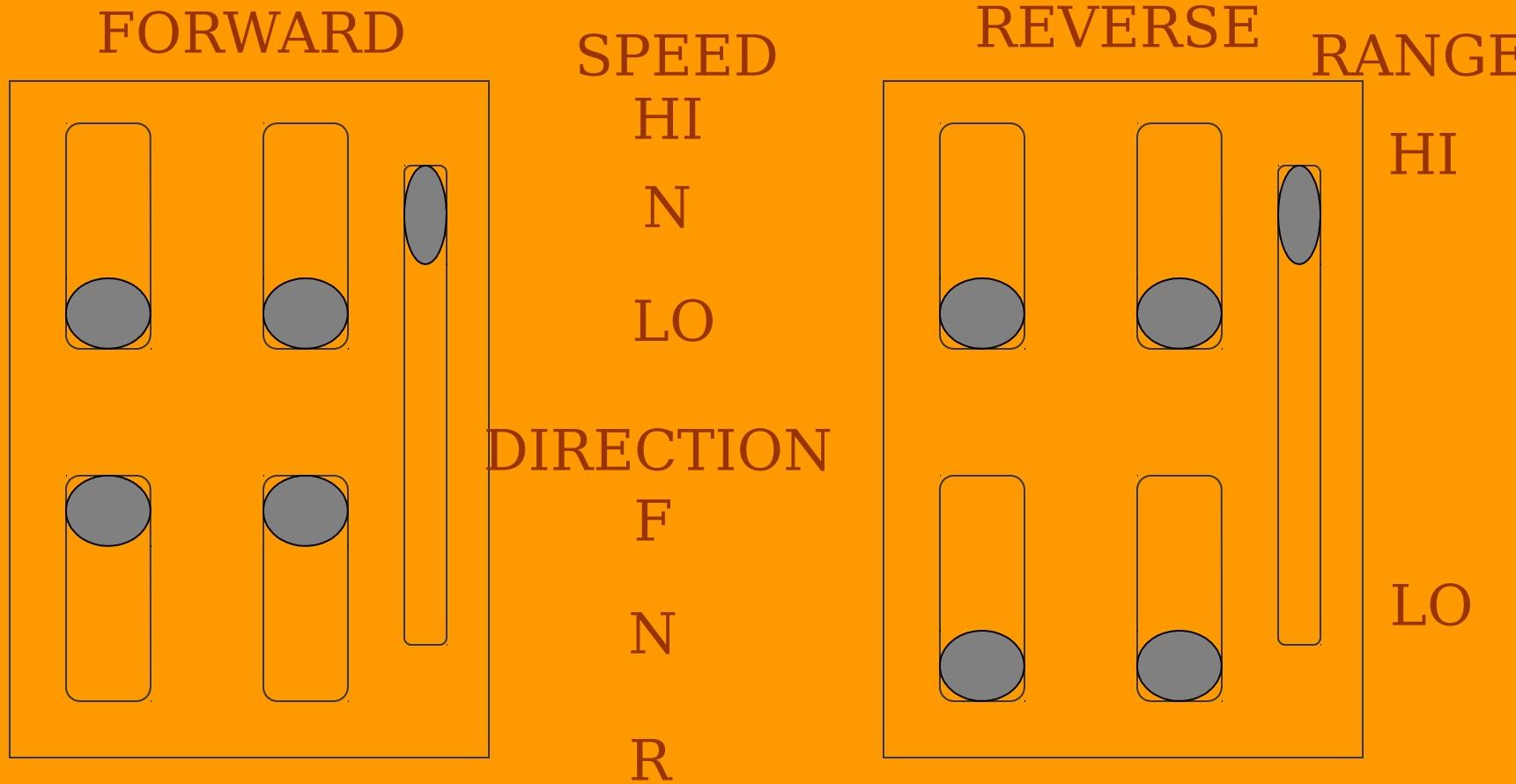
# *CONTROL SETTINGS*



# 1ST

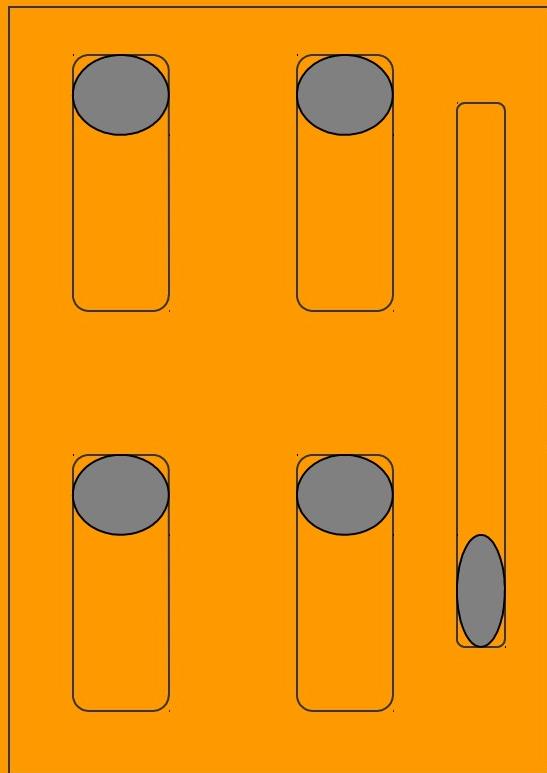


# 2ND



# 3RD

FORWARD



SPEED

HI

N

LO

DIRECTION

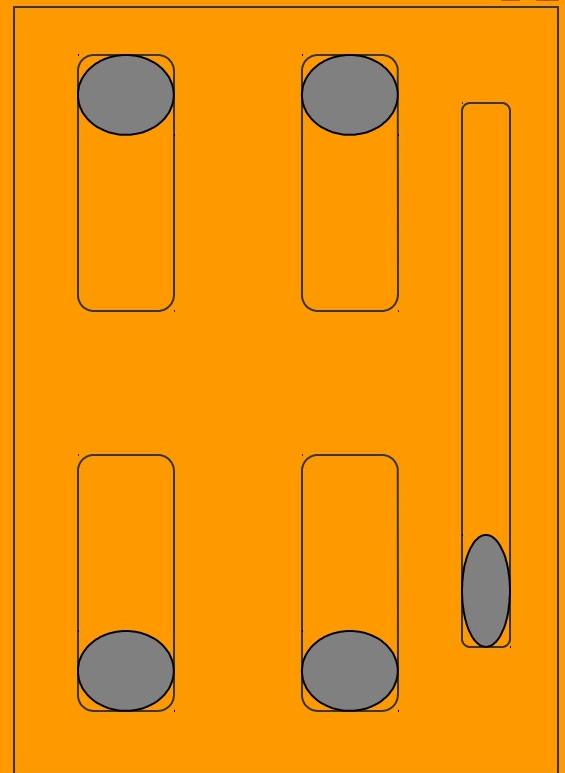
F

N

R

REVERSE

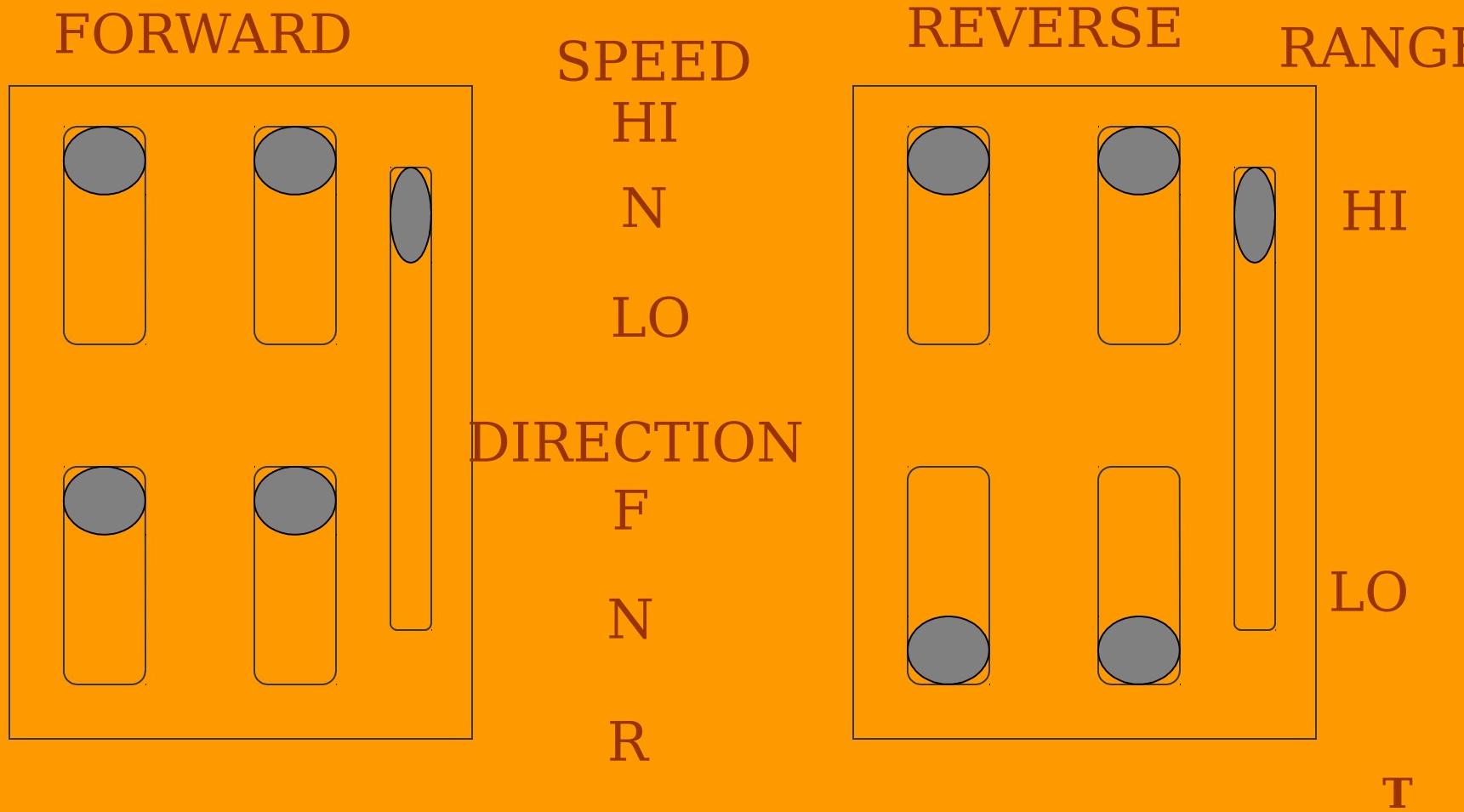
RANGE



HI

LO

# 4TH



# *QUESTIONS ??*

**What is the range lever used for?**  
**Changing Gears**

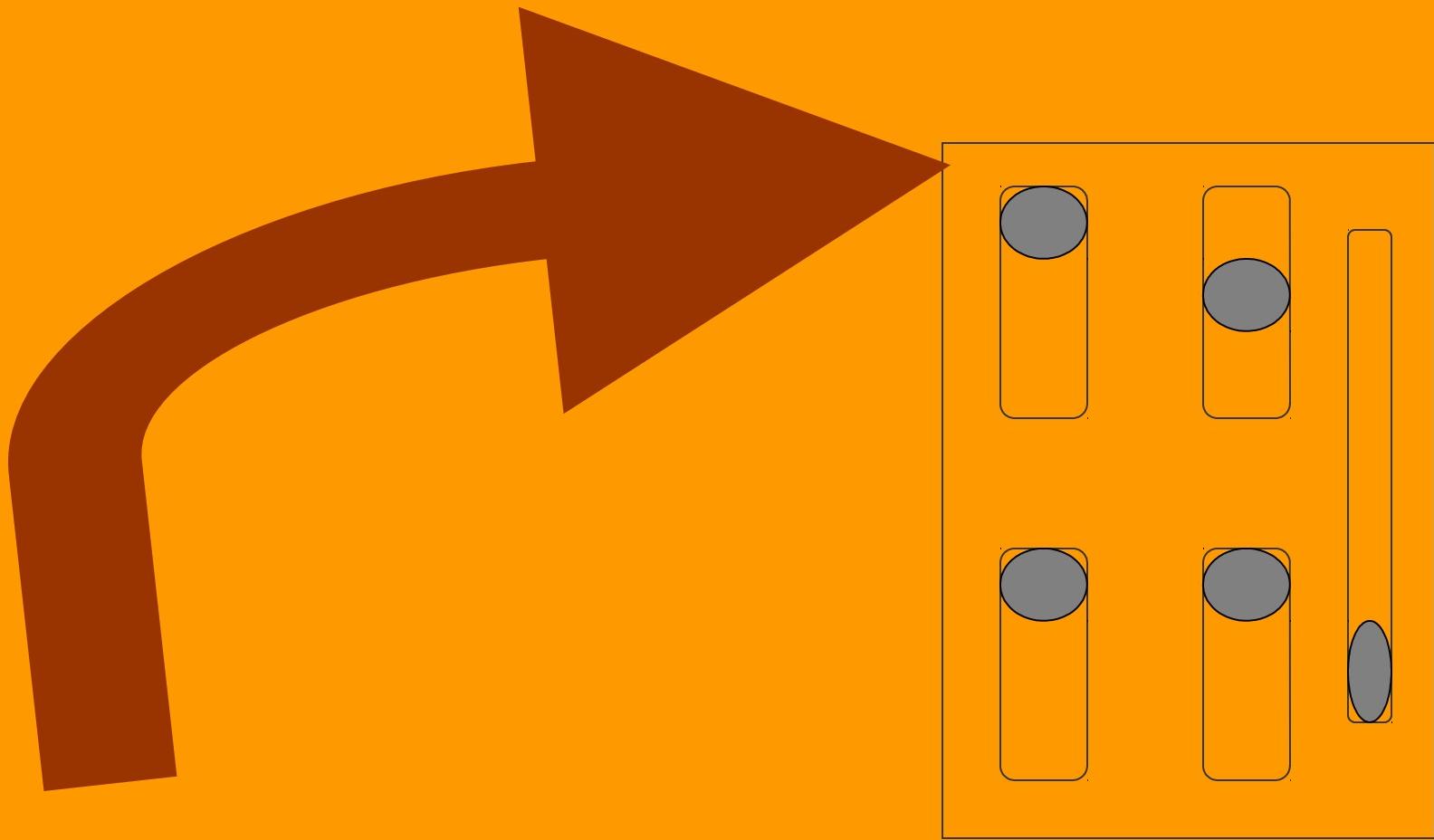
**What levers control the direction  
of the tractor?**

**The rear control levers**

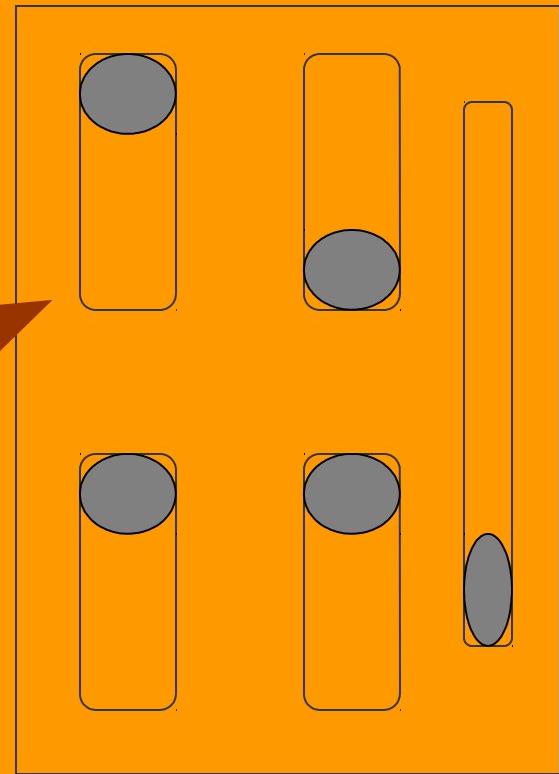
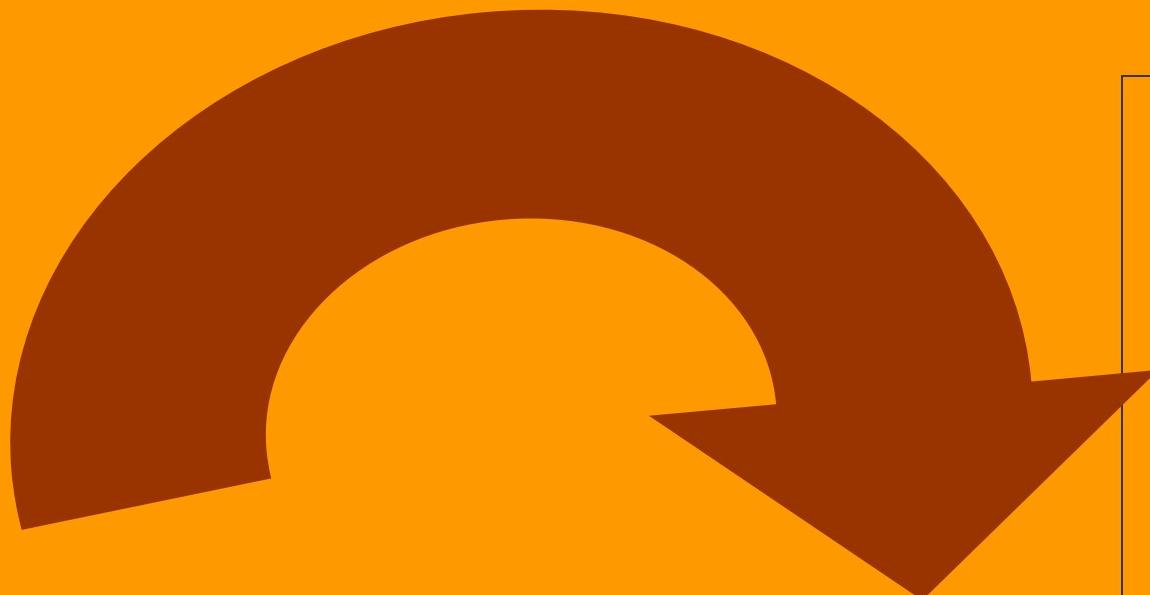
# *Types of Turns*

- Gradual Turn
- Power Turn
- Brake Turn
- Counter Rotation

# ***GRADUAL TURN***

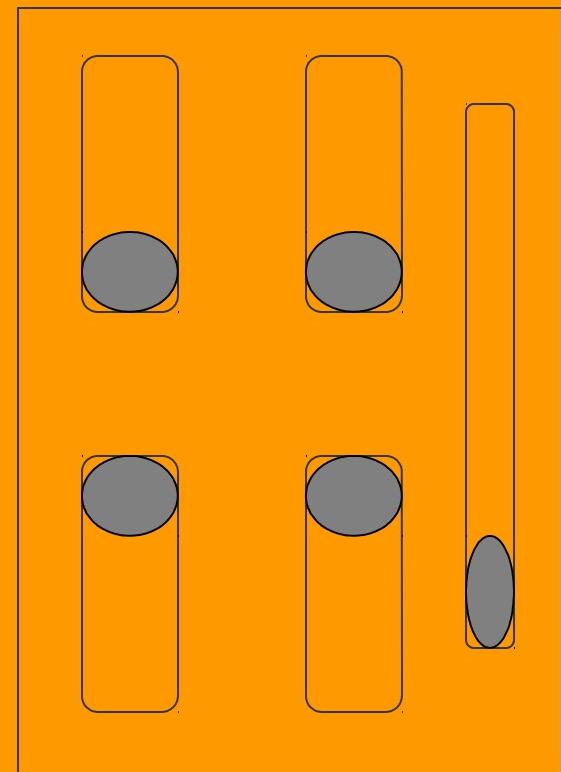


# ***POWER TURN***

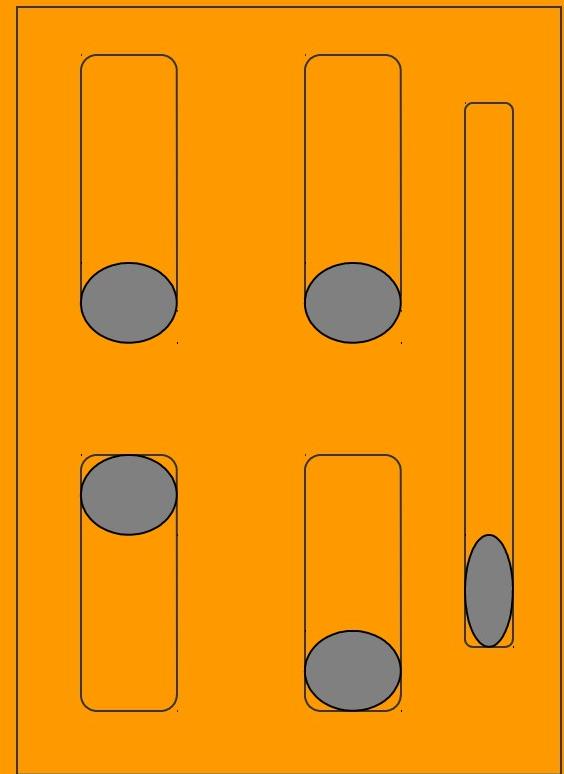


# *BRAKE TURN*

USED FOR CLOSE QUARTER OPERATING  
example: when near other equipment or buildings / structures



# *COUNTER ROTATION TURN*



# *QUESTIONS ??*

**What turn is used around other equipment?**

**Brake Turn**

**What turn has one track in forward and one track in reverse?**

**Counter Rotational Turn**

# 10 Min Break

# *Basic Operations*

- Starting/Stopping
- Dozing Techniques
- Fording Operations
- Vehicle Recovery
- Leveling
- Stockpiling

# *Starting*

- Perform Before Operation Checks in accordance with NAVMC 10523.
- Mount the tractor from the Left Side of the vehicle, utilizing Hand rails and Foot peg.
- Ensure Parking Brake is engaged and ALL Control Levers are in Neutral.
- Turn the Master Disconnect Switch to the ON position.
- Turn the Ignition Switch to the ON position.
- Push the Foot Throttle down 1/2 way, while pressing the Engine Start button to Engage the starter.
- Let the engine Warm-up 3-5 minutes BEFORE operating.

# ***STOPPING PROCEDURES***

- Bring the tractor to a Complete Stop in a designated area.
- Shift all control levers to the Neutral position.
- Raise/Apply the Neutral Lock into position.
- Apply the Manual Brake and pull up on the Parking Brake.
- Slowly lower the Blade to the ground, and place the blade in float.
- Allow the engine to Cool-Down for 3-5 minutes.
- Turn the Ignition Switch to the OFF position
- Turn the Master Disconnect switch to the OFF position.
- Dismount the tractor from the Left Side using

# *Fording Ops*

- Check the area
- Disconnect the fan
- Ensure the fan is off (visually)
- Proceed through water (60" max)
- Exit the water
- Reengage fan (visual check)

# *Vehicle Recovery*

- **TWO TECHNIQUES**
  - Winch
  - Blade to Blade

# *Winch*

- Place recovery vehicle 25' - 150'
- Ensure vehicle is on stable foundation
- Disable vehicle, place transmission in reverse and raise blade
- Ensure winch cable is secure to clevis hook of disable vehicle
- Recovery vehicle will attempt to winch the disabled vehicle

**CAUTION:** All personal must stand back a minimum of 2x the cable length  
There must be only 1 ground guide

# *Blade to Blade*

- Slowly push material against the blade for buffer
- Disable tractor raises blade 12"-18" putting tractor in reverse
- The recovery vehicle pushes the disabled vehicle out

# *Dozing Techniques*

- Slot
- Blade to Blade
- Downhill

# *Slot Dozing*

- Used when stockpiling and high production dozing
- Prevents loss of spoils
- Increase production up to 50%



# *Blade to Blade*

- 50-300 feet
- Used for moving large quantities
- Best if used by experienced operators



# *Downhill*

- Most productive method
- Uses gravity to increase production
- Used whenever jobsite permits

# *Leveling*

- Identify the highs and lows
- Tractor in 1<sup>st</sup> gear start cutting
- 1-3 inch cuts in high areas, and feather material in the lows
- Feather at the end of pass
- Back straight up and center on windrow
- Repeat steps B-C

# *Stockpiling*

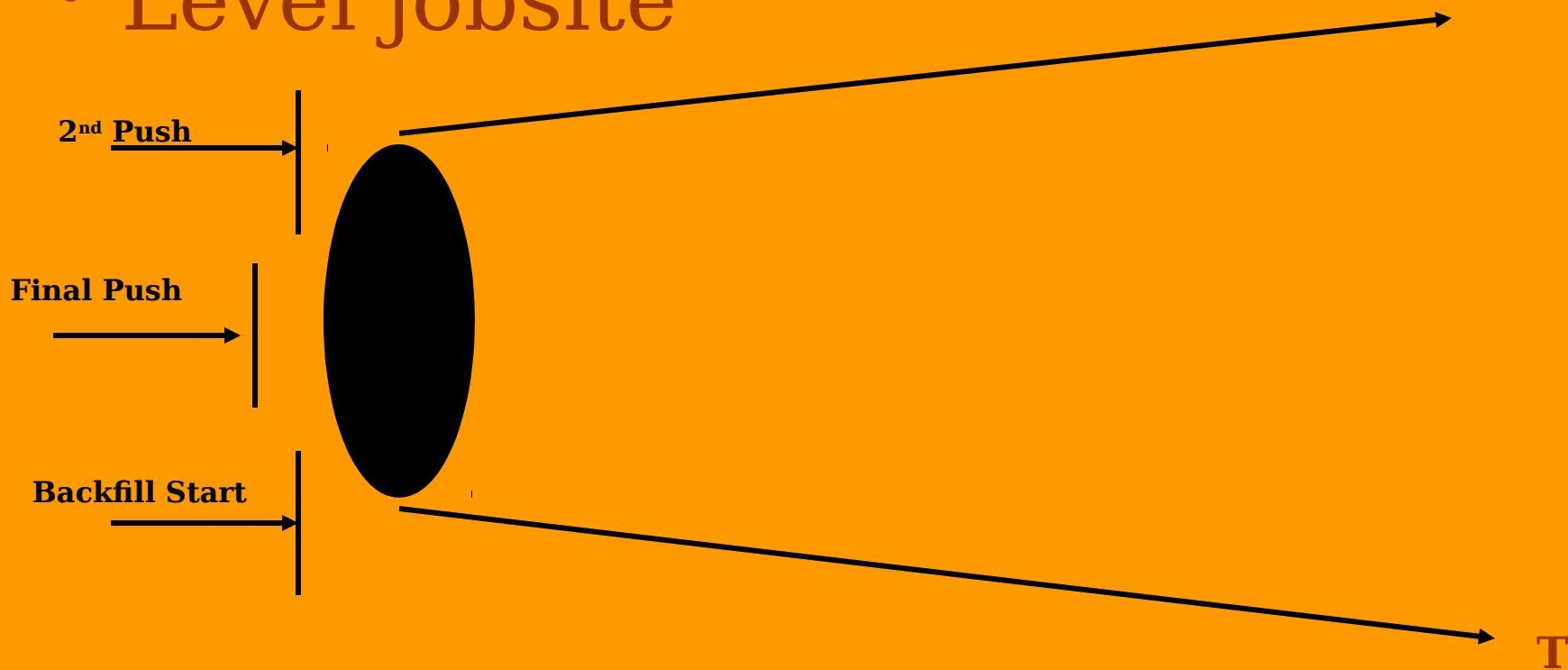
- Start on level surface if possible
- Lower blade to ground 1<sup>st</sup> gear ( do not cut more than 3 inches)
- Push material to designated area (at least 50 feet away) keeping a level cut
- Back tractor up and center 1/3 of blade on windrow
- One end of blade should skim ground while the other cuts
- Keep making passes until stockpile is 5' feet

## *Stockpiling cont...*

- To spread use 1/3 of blade on the sides of stockpile, starting on the right hand side.
- As you are spreading out, raise and lower the blade as needed to maintain a level area.
- Slowly raise the blade until the material is feathered evenly along the entire distance of your pass.
- Back the tractor up and repeat until the entire stockpile is spread out.

# Stockpile Deconstruction

- Doze right, left then center of stockpile
- Feather material
- Level jobsite



# ***QUESTIONS ??***

**The 1150E is capable of fording what depth?**

**60 inches**

**Personal should stand what distance from the winch cable during winching operations?**

**2x the cable length**

**How deep should you cut while stockpiling?**

**1-3 inches**

# PMCS

NAVMC 10523

- Block 9  
NO CLUTCH
- Block 14  
Line out Tanks and  
write compressor
- Block 22  
Line out Tires
- Block 23  
Write "Blade" C
- Block 24  
Write "Winch" C

## DAILY "A" PM SERVICE

### Legend for marking

A — Adjust  
C — Check  
L — Lubricate

S — Service  
V — Verify  
/ — Not applicable

X — Adjustment/I  
O — Defect Correc

ITEM NO.	COVERAGE	OPERATION			8 HOUR
		BEFORE	DURING	AFTER	
1	DAMAGE, PILFERAGE, LOSS	C			C
2	LEAKS, GENERAL	C			C
3	FUEL, OIL, WATER	V			S
4	ENGINE WARMUP	C			
5	INSTRUMENTS	C		C	
6	SAFETY DEVICES	C			
7	TOOLS AND EQUIPMENT	C			
8	PUBLICATIONS	V			
9	CLUTCH	V		C	
10	STEERING	C		C	
11	ENGINE OPERATION			C	
12	UNUSUAL NOISES	C		C	
13	LIGHTS AND REFLECTORS	C			
14	AIR TANKS	S			S
15	DRIVE BELTS	C			C
16	BATTERY ELEC. LEVEL	C			S
17	ANTIFREEZE TEST TO ____ ° F	V			
18	SERVICE BRAKES	V		C	
19	TRANSMISSION	C		C	
20	AIR FILTER	V			S
21	FUEL FILTERS	S			S
22	TIRES/TRACK	C			C
23					
24					
25					

#### NOTES:

1. Add other coverages and procedures designated by the appropriate technician.

# QUESTIONS?

**What depth from the filler neck should the coolant be?**

**1/2 inch from the filler neck**

**What is the proper carry height of the blade?**

**12 to 18 inches**

**What position should the blade be in for the proper parkline position?**

**Float**

**What should you do after engaging the fan disconnect switch?**

**Visually inspect the fan blade**

# SUMMARY

- Characteristics
- Major Components
- Instruments and controls
- Basic operations
- Dozing techniques

# *References*

- Basic Operators Bag SL-3-11825A
- Marine Corps Ground Equipment Record Procedures TM 4700-15/1
- Tractor, Full Tracked, With Angle Blade and Rear-Mounted Winch (Model: MC1150E) TM-09062A-OR
- Use and Care of Hand Tools and Measuring Tools TM 10209-10/1
- Visual Signals FM 21-60